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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/574,331	03/31/2006	Seok Soo Kim	930086-2025	5885

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EXAMINER

BLAND, LAYLA D

ART UNIT	PAPER NUMBER
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1623

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/574,331	Applicant(s) KIM ET AL.	
	Examiner LAYLA BLAND	Art Unit 1623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 October 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) 7-12 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>3/31/2006</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This application is a National Stage Application of PCT/KR2005/004663, filed December 30, 2005.

Applicant's election with traverse of Group I, claims 1-6, in the reply filed on October 20, 2008 is acknowledged. The traversal is on the ground(s) that a search for claims 7-12 would not be burdensome. This is not found persuasive because this is a National Stage Application and the relevant question is whether the application possesses a special technical feature, as noted by Applicant. Furthermore, a search for the process claims of Group I would not fully encompass a search for the compounds of Group II because those compounds could be made by a process other than that of Group I. Applicant argues that claims 7-12 are directly or indirectly linked to claim 1 and cites MPEP 809.03. It is noted that the Examiner's version of the MPEP, revised July 2008, does not contain the same text as cited by Applicant; "a claim to the necessary process of making a product linking proper process and product claims" is not found in the Examiner's MPEP 809.03. Furthermore, the relevant question is whether the application possesses a special technical feature, as mentioned above. Applicant also traverses on the ground that the restriction requirement erred in asserting that Groups I and II lack a shared special technical feature.

As was discussed in the requirement for restriction mailed September 25, 2008, the technical feature linking Groups I and II is hydroxyalkylalkyl cellulose. Hydroxyalkylalkyl cellulose derivatives are known in the art and thus there is not a special technical feature linking the inventions of Groups I and II. Applicant also states

Art Unit: 1623

that, as no lack of unity of invention was made in the international search report, a lack of unity of invention should not be made for the national stage application. MPEP 1893.03 states that, for a U.S. National Stage Application, "unity of invention proceeds as under 37 CFR 1.475." MPEP 1.475 states that 'the requirement of unity of invention shall be fulfilled only when there is a technical relationship among those inventions involving one or more of the same or corresponding special technical features. The expression "special technical features" shall mean those technical features that define a contribution which each of the claimed inventions, considered as a whole, makes over the prior art.' As discussed above, Groups I and II do not share a special technical feature and thus unity of invention is not fulfilled.

The requirement is still deemed proper and is therefore made FINAL.

Claims 8-12 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on October 20, 2008.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 5 and 6 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 5 and 6 recite the limitation “efficiency of said alkylene oxide” or “efficiency of said alkyl halide.” It is unclear how the efficiency is determined or what the term is intended to mean. The specification, pages 10-11, states that efficiency was determined by “calculating the proportion of substitution.” In Table 2, Example 1, the degree of methoxyl substitution is 28.5 and the degree of hydroxypropoxyl substitution is 6.5; the methyl chloride efficiency is 61.2% and the propylene oxide efficiency is 62.5%. It is unclear which values were used to arrive at the efficiency numbers. Furthermore, the specification, page 5, states that the maximum value for degree of substitution is 3 but the degree of substitution given in Table 2 is much higher than 3.

Claims 5 and 6 are drawn to the method of claim 1, wherein the efficiency of alkylene oxide is 60-75%, or wherein the efficiency of alkyl halide is 60-70%, respectively. The method of claim 1 is quite broad, including no limitations on temperature or time, and including very broad ranges for amount of reagent used (5-80%, 0.5-4 moles). It is unclear which conditions within claim 1 will result in an efficiency of alkylene oxide of 60-75%, or an efficiency of alkyl halide of 60-70%. MPEP 2173 states: “The primary purpose of this requirement of definiteness of claim language is to ensure that the scope of the claims is clear so the public is informed of the boundaries of what constitutes infringement of the patent.” The skilled artisan would not know if he or she was infringing because the conditions required for achieving the recited efficiencies are not set forth.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Claims 1-6 are rejected under 35 U.S.C. 102(a) as being anticipated by Kim (KR 10-2003-0092006, published June 22, 2005, machine translation).

Kim teaches a method for preparation of hydroxyalkylalkylcellulose, wherein 4.5 kg of 50% sodium hydroxide is added to 7 kg of pulp, and then 6.0 kg of methyl chloride and 4.0 kg propylene oxide and the mixture reacted for 1 hour at 80°C. Then 5 kg of a second sodium hydroxide solution were injected, followed by 7.0 kg of methyl chloride and the mixture was further reacted at 90°C for 1 hour. [page 5, Embodiment 1].

Generally, the first alkali metal hydroxide is used at about 0.5-4.0 molar ratio. The first methyl chloride should be used at about 0.5-3.0 molar ratio compared to the cellulose. The alkylene oxide should be used at about 1.0-2.5 molar ratio. The second sodium hydroxide should be used at about 1.0-4.0 molar ratio, and the second alkyl halide at about 2-6 molar ratio. [page 4, second paragraph - page 5, first paragraph]. Kim's method steps are the same as the instant method steps, and thus the claims are anticipated.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-6 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Dannhorn et al. (US 2003/0065165, April 3, 2003).

Dannhorn et al. teach a process for preparing methyl hydroxypropyl cellulose wherein cotton linters were reacted with 1.57 eq. of chloromethane, 2.0 eq. of sodium hydroxide, and 0.8 eq. of propylene oxide at 85°C. After reaction at 85°C for 120 minutes, 1.2 eq. of sodium hydroxide and 3.36 eq. of chloromethane were metered in and the mixture reacted at 85°C for another 120 minutes. [Example 12, paragraph 0061 and Table 2]. The total amount of chloromethane added was 4.93 eq. (1.57 + 3.36). Thus, the first portion was about 32% of the total and the second portion was about 68% of the total. Dannhorn's method steps are the same as the instant method steps, and thus the claims are anticipated.

Dannhorn et al. do not specifically mention "agitating" or "dispersing" the mixture between addition of reagents. However, it appears that the mixture was stirred throughout the process; "while stirring," "stirred for 120 minutes," "stirred for another 60 minutes," etc., which is considered the same as agitating or dispersing. Example 12 does not specifically mention the order of addition in the last phase of the reaction; whether sodium hydroxide or chloromethane was added first. However, Dannhorn et al.

Art Unit: 1623

teach that the second portion of methyl chloride can be added before, during, or after the addition of the second portion of sodium hydroxide [0052], so it would have been obvious to do so.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LAYLA BLAND whose telephone number is (571)272-9572. The examiner can normally be reached on Monday - Friday, 7:00 - 3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anna Jiang can be reached on (571) 272-0627. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Layla Bland/ Examiner, Art Unit 1623

/Shaojia Anna Jiang/

Supervisory Patent Examiner, Art Unit 1623